

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method comprising:

issuing a first instruction from a queue;

in response to detecting a blocking condition that prevents the first instruction from being completed, determining whether the blocking condition is a non-transient blocking condition or a transient blocking condition, a transient blocking condition having a shorter duration relative to a non-transient blocking condition;

in response to the blocking condition being a non-transient blocking condition,

enqueueing the first instruction within a recirculation queue,

setting a state of the first instruction in the recirculation queue to a blocked state to prevent the first instruction from being reissued from the recirculation queue,[[;]] and

in response to detecting that the non-transient blocking condition no longer exists, changing the state of the first instruction in the recirculation queue to an unblocked

state to permit the first instruction to be reissued from the recirculation queue; and

in response to the blocking condition being a transient blocking condition,

enqueueing the first instruction within the recirculation queue, and

setting the state of the first instruction in the recirculation queue to the unblocked state to permit the first instruction to be reissued from the recirculation queue,

wherein the blocking condition corresponds to a hazard in which the first instruction cannot execute until completion of a second instruction issued prior to the first instruction.

2. (Previously Presented) The method of claim 1, wherein issuing the first instruction from the queue comprises:

arbitrating between a plurality of queues to select [[a]] the queue;

selecting a current instruction from the queue; and

issuing the current instruction from the queue.

3. (Previously Presented) The method of claim 2, wherein issuing the current instruction comprises:

determining a state of the current instruction; and

if the state of the current instruction is blocked, then

selecting an alternate queue from the plurality of queues, and

issuing an instruction from the alternate queue.

4. (Previously Presented) The method of claim 1, wherein enqueueing the first instruction within the recirculation queue comprises:

placing the first instruction within the recirculation queue; and

storing the blocking condition.

5. (Previously Presented) The method of claim 1, further comprising:

identifying blocking conditions of instructions within the recirculation queue;

determining whether any blocking condition of any instruction within the recirculation queue is satisfied; and

enabling reissuance of a given instruction from the recirculation queue by setting the state of the given instruction within the recirculation queue to the unblocked state if the blocking condition associated with the given instruction is satisfied.

6. (Cancelled)

7. (Previously Presented) The method of claim 1, further comprising:

in response to enqueueing the first instruction in the recirculation queue due to the blocking condition being a transient blocking condition,

resetting a state of all other instructions within the recirculation queue to the unblocked state.

8. (Cancelled)

9. (Previously Presented) The method of claim 1, wherein the hazard corresponds to a data hazard or a resource hazard.

10. (Original) The method of claim 1, wherein the recirculation queue is a first in, first out circular queue.

11. (Currently Amended) An article of manufacture including a machine readable storage medium having computer executable instructions tangibly stored thereon, the instructions for:

issuing a first instruction from a queue;

in response to detecting a blocking condition that prevents the first instruction from being completed, determining whether the blocking condition is a non-transient blocking condition or

a transient blocking condition, a transient blocking condition having a shorter duration relative to a non-transient blocking condition;

in response to the blocking condition being a non-transient blocking condition,

enqueuing the first instruction within a recirculation queue,

setting a state of the first instruction in the recirculation queue to a blocked state to prevent the first instruction from being reissued from the recirculation queue,[[;]] and

in response to detecting that the non-transient blocking condition no longer exists, changing the state of the first instruction in the recirculation queue to an unblocked state to permit the first instruction to be reissued from the recirculation queue; and

in response to the blocking condition being a transient blocking condition,

enqueuing the first instruction within the recirculation queue, and

setting the state of the first instruction in the recirculation queue to the unblocked state to permit the first instruction to be reissued from the recirculation queue,

wherein the blocking condition corresponds to a hazard in which the first instruction cannot execute until completion of a second instruction issued prior to the first instruction.

12. (Previously Presented) The article of manufacture of claim 11, wherein issuing the first instruction from the queue comprises:

arbitrating between a plurality of queues to select a the queue;

selecting a current instruction from the queue; and

issuing the current instruction from the queue.

13. (Previously Presented) The article of manufacture of claim 12, wherein issuing the current instruction comprises:

determining a state of the current instruction; and

if the state of the current instruction is blocked, then

selecting an alternate queue from the plurality of queues, and

issuing an instruction from the alternate queue.

14. (Previously Presented) The article of manufacture of claim 11, wherein enqueueing the first instruction within the recirculation queue comprises:

placing the first instruction within the recirculation queue; and

storing the blocking condition.

15. (Previously Presented) The article of manufacture of claim 11, wherein the machine readable storage medium further comprises instructions for:

identifying blocking conditions of instructions within the recirculation queue;

determining whether any blocking condition of any instruction within the recirculation queue is satisfied; and

enabling reissuance of a given instruction from the recirculation queue by setting a state of the given instruction within the recirculation queue to the unblocked state if the blocking condition associated with the given instruction is satisfied.

16. (Cancelled)

17. (Previously Presented) The article of manufacture of claim 11, wherein the machine readable storage medium further comprises instructions for:

in response to enqueueing the first instruction in the recirculation queue due to the blocking condition being a transient blocking condition,

resetting a state of all other instructions within the recirculation queue to the unblocked state.

18. (Cancelled)

19. (Previously Presented) The article of manufacture of claim 11, wherein the hazard corresponds to a data hazard or a resource hazard

20. (Original) The article of manufacture of claim 12, wherein the recirculation queue is a first in, first out circular queue.

21-41. (Cancelled)

42. (Previously Presented) The method of claim 1, wherein the non-transient blocking condition has a duration of 1 cycle.

43. (Previously Presented) The article of manufacture of claim 11, wherein the non-transient blocking condition has a duration of 1 cycle.